

**In the United States Patent and Trademark Office**

Serial No. 10/705,767

§ Filing Date: 11/10/2003

Title: METHOD FOR MANUFACTURING A  
PART OF A SPORTS BOOT

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§ Examiner: pending

Applicant: PEROTTO

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§ GA No.: pending

Atty docket no: 2.R493.80

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**INFORMATION DISCLOSURE STATEMENT**

To:

Mail Stop DD  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Pursuant to the provisions of 37 C.F.R. §1.97, Applicant encloses the references set forth in the attached modified form PTO/SB/O8A. No inference should be made that the cited references are in fact material, are in fact prior art, are analogous art, or that no better art exists. The cited patents are listed in numerical order and not in any order based on their pertinence.

It is requested that the Examiner fully consider the cited references and that they be cited on the front of any patent issuing from this application.

Copies of the cited references are attached.

**Statement of Relevance of Foreign Patent Document :**

**English translation of the French patent No 1547769 – Improvements to the manufacture of boots, particularly ski boots, in synthetic material or in molded rubber**

Company: LE TRAPPEUR, resident in Isère (France).

The present invention relates to improvements to the manufacture of boots, particularly boots for skiing, in synthetic material or in molded rubber.

As is known, a great number of processes have been proposed for producing ski boots from moldable materials, the carcass of the boot being obtained either by shaping it in an impression or by injection-molding in an appropriate mold. However, all known processes have the same drawback, which is particularly troublesome in the case of ski boots, which is that the carcass obviously cannot have any overlapping upper flap.

The improvements that are the subject matter of the present invention aim to make it possible to produce a boot, particularly a ski boot, that does not have the abovementioned drawback and in which the upper is basically identical to ordinary leather boots.

The invention consists principally in making the boot by the sealed joining of two elements produced separately by molding, which elements are fixed to each other on a vertical plane oriented longitudinally with respect to the sole.

It will be understood that by this means each of the two elements may be of any configuration and that it can in particular be given parts that extend beyond the vertical joining plane, which parts thus form flaps that can be overlapped.

The two elements can be joined in any appropriate way suitable for the material from which they are made; in particular they may be joined by thermal welding or adhesive bonding with vulcanization. The connecting joints are preferably covered by separate joint covers, the profile and/or coloration of which are such as to improve the esthetic appearance of the boot and the strength and leaktightness of the assembly. To facilitate lasting operations, the lower part of one of the elements advantageously has projecting pegs designed to be engaged in corresponding perforations opposite them on the lower part of the opposite element.

The attached drawing, given by way of example, will assist an understanding of the invention, of its features and of the advantages procured thereby:

figure 1 is a side view of one of the two elements forming a ski boot made in accordance with the present invention;

figures 2 and 3 are schematic cross sections taken on II-II and III-III, respectively, (fig. 1), showing the boot obtained once the two elements have been joined together;

figure 4 is a cross section of a detail on an enlarged scale showing the ventilation cells provided on the upper wall of the lower part of each element; and

figure 5 is a rear elevation depicting the resulting boot.

As indicated at the start of this text, in order to manufacture a ski boot in accordance with the invention, two separate elements such as that illustrated in figure 1 are first produced. Each of these elements is made by injecting rubber or an appropriate synthetic material (such as polyvinyl chloride) into a mold of suitable shape; each element has an upper part 1 corresponding to the front and rear of the upper of an ordinary boot as if cut along the boot's longitudinal axis, and a lower part 2 or sole. As shown in figures 2 and 3, where the same reference numbers have been given to the

two parts with the addition of a prime, the rear part of the upper 1 or 1' has the normal depression forming a receptacle for the ankle of the wearer, while the forepart has integral overlapping flaps 3 and 3' with associated closing mechanisms 4 and 4' of the buckle and lever type. On the top part of the upper 1 of one of the elements are continuations 5 (fig. 1) in the form of straps designed to be engaged with corresponding fixing mechanisms attached to the opposite element.

The lower part or sole 2 of one of the elements is provided with lateral pegs 6 (fig. 3) oriented transversely so as to be engaged in blind housings 6' in the side wall of the opposite element. It will be understood that these pegs and housings ensure precise centering of the two elements in the joining operation. Joining is performed in any appropriate way, as for example by thermal welding in the case of a synthetic material, or by adhesively bonding and vulcanization in the case of rubber. The connection is brought about at the rear vertical edge of the two uppers 1 and 1' and at the forward upper edge of each of these uppers; the connection of course also involves the opposing longitudinal faces of the soles 2 and 2'. The join is completed by joint covers 7 (fig. 5) which are given appropriate profiles and may have any desired coloration. The boot is given an outsole 8 that is attached to the underside of the soles 2 and 2'.

It goes without saying that the resulting ski boot may have a leather or skin tongue attached in such a way as to extend underneath the overlapping flaps 3 and 3' and underneath the continuations or straps 5. This boot can be used in its as-manufactured form or, as a variant, can serve as a carcass for a removable inner slipper of the kind outlined at A in figure 1. To ventilate the boot or carcass, the upper wall of the lower parts or soles 2 and 2' is preferably recessed with depressions or cells 9 forming housings for a multitude of air bubbles.

Tests have shown that the process according to the invention produces ski boots whose appearance and use are basically identical to those of ordinary leather boots. It goes without saying that the two elements can be produced not only by injection molding but also by forming them on an appropriate last and in an appropriate mold.

It should also be understood that the above description has been given purely as an example and that it in no way limits the domain of the invention, which encompasses not only the details of embodiment described above but also all other equivalent details.

## CLAIMS

I. Improvements to the manufacture of boots, particularly ski boots, in synthetic material or in molded rubber, consisting principally in making the boot by the sealed joining of two elements produced separately by molding, which elements are fixed to each other on a vertical plane oriented longitudinally with respect to the sole, which improvements may also apply to the other points given below, considered separately or in combination:

1. The connecting joints are covered by bands forming joint covers, which bands may optionally be colored differently from the boot;
2. The lower part of one of the elements has projecting lateral pegs designed to be engaged in corresponding perforations opposite them on the lower wall of the opposite element, in such a way as to bring about correct centering of the two elements when joined together;
3. The boot encloses a removable inner slipper;
4. The upper face of the lower part of each element comprises a series of cells suitable for ventilation of the foot.

II. Boots, particularly ski boots, produced by carrying out the improvements according to I.

*English translation of the French patent No 1426842 – Molded sole and in particular a sole for a sandal.*

Company: J. H. BENECKE BETEILIGUNG-GmbH & Co. K. G. resident in the Federal Republic of Germany.

The present invention relates to a molded sole and in particular a sole for a sandal.

In the manufacture of sandal soles, it has hitherto been customary to proceed by foaming in an appropriate mold, by heating, a blend of rubber containing an expansion agent, and solidifying it by vulcanization. However, due to the long duration of heating necessary for vulcanization, this method of manufacture takes a great deal of time. Moreover, in this process there is no way of providing in a single operation the sole of a top or of a vamp. A top of this kind has instead to be applied separately, following the manufacture of the sole. This further lengthens the manufacturing operation.

It is also known practice to manufacture sandal soles from blends of latex and powdered cork. The process involves pouring the latex blend into a mold, removing the water by heating, and vulcanizing. This method of manufacture also of course requires much time.

Again, it is known practice to manufacture walking soles that consist of a core of expanded (microcellular) polyvinyl chloride and an envelope of the same material which surrounds this core. However, the manufacture of these soles has drawbacks because, in order to foam or expand and gel the polyvinyl chloride, high temperatures are necessary, requiring expensive equipment. With this process, too, it would not be possible to apply to this sole, in the same operation as the manufacture of the sole, layers of heat-sensitive materials.

The subject of the present invention is a molded sole, and in particular a sandal sole, that has, when compared with the molded soles and sandal soles known hitherto, notable advantages in terms of manufacture and use. The new sole or sandal sole is characterized by the fact that it consists of an expanded polyurethane produced by bringing about the foaming of blends of polyesters or polyisocyanate polyethers and that it has on its upper face and/or on its lower face a layer of another material that is bonded to it inseparably by the expansion operation.

In a preferred embodiment, the sides of the sole are also surrounded by a layer of another material, so that the expanded polyurethane is as it were in a bed formed by the other material.

The new molded sole can be manufactured rapidly with no difficulties. All that is required for this purpose is to introduce the polyester or polyisocyanate polyether into the mold, in which another flat material has previously been placed, and then expanding it. An intimate bond is produced between the flat material and the expanded substance, without the use of pressure or the application of external heat.

Given that the construction of the side of the sandal sole that is nearest the foot is of particular importance, this top side may consist of a sheet of polyvinyl chloride (PVC) that has been colored and softened and may receive an impression and imprints similar to those of leather. An ordinary fabric or a mesh fabric that has received a layer of softened PVC may be used for this purpose.

The materials used in the manufacture of the top face and/or lower face may be very different in nature. It is particularly advantageous, for example, to use for this purpose sheets of a synthetic thermoplastic. Good results have also been obtained with textiles, leather, artificial leather, products similar to leather obtained by sheets of binder-consolidated fibers, but in certain cases even the use of wood or metal may be indicated. If using sheets of a synthetic thermoplastic, these sheets may, if necessary, be stamped to give them the surrounding configuration for the sandal sole. With sheets

thus configured in advance, the edge of the sole can be successfully made in a simple manner, such that it is unnecessary to do any further work on it afterwards. For example, a sheet of colored PVC that has received an impression and imprints may be used.

For all the above embodiments, it is also of course possible to introduce reinforcements into the mold, such as reinforcing insteps, which are then incorporated, after the end of the expansion operation, with strong adhesion, inside the expanded product. There is also the possibility here of selecting appropriate molds so as not only to give the soles any desired profile but also to provide, if so desired, in the sole, notches for the subsequent introduction of shoe parts or attachment members or the like.

The new molded sole has, besides the advantages that have already been cited, a range of other advantages also. For example, the use of expensive molds is unnecessary because the process requires neither temperatures nor pressure. And it is noteworthy how low the density is compared with molded soles manufactured hitherto, with an elasticity which is simultaneously increased.

## CLAIMS

1. Molded sole, and, in particular, sandal sole, characterized by the fact that it consists of an expanded polyurethane produced by bringing about the foaming of blends of polyesters or isocyanate polyethers and that it has on its upper face and/or on its lower face a layer of another material that is connected to the expanded polyurethane inseparably by the expansion operation.
2. Different embodiments of this sole, having one or more of the following features:
  - a. The sides are surrounded by a layer of a material different from the expanded polyurethane;

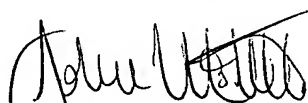


- b. Reinforcing or stiffening elements are incorporated, during their expansion, in the expanded polyurethane;
- c. The molded sole has notches for the purpose of receiving shoe parts or reinforcing or stiffening elements.

An early action on the merits is respectfully requested.

If the Examiner has further questions, he is invited to contact the undersigned at phone 011-4122-747-7849 or fax at 011-4122-346-8960.

Respectfully submitted,



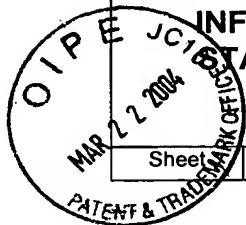
John MOETTELI

U.S. Reg. No. 35,289

Date: March 18, 2004

Enclosures: IDS form  
copies of cited patents

Substitute for form 1449/PTO				<b>Complete if Known</b>	
				Application Number	10/705,767
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (Use as many sheets as necessary)				Filing Date	11/10/2003
				First Named Inventor	PEROTTO
				Art Unit	
				Examiner Name	
				Attorney Docket Number	2.R493.80
Sheet	1	of	2		



U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	US-5,089,191	02-18-2002	HUGHES IAN L	Whole document
	2	US-3,548,081	06-08-1971	HAYASHI HIDEO	Whole document
	3	US-3,130,505	04-28-1964	MARKEVITCH IGOR	Whole document
	4	US-6,558,784	05-06-2003	ADC COMPOSITES	Cited in the patent application
		US			
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FOREIGN PATENT DOCUMENTS					
Examiner Initials	Cite No	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	5	WO 90 03744	04-19-1990	RBFPT INC	Claims 1-3
	6	FR 1 426 842	01-28-1966	BENECKE GMBH	Claims
	7	FR 1 547 769	10-21-1968	LE TRAPPEUR	Cited in the patent application

Examiner Signature		Date Considered	
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Substitute for form 1449/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(Use as many sheets as necessary)</i>				<b>Complete if Known</b>	
				Application Number	10/705,767
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				First Named Inventor	PEROTTO
				Art Unit	
				Examiner Name	
Sheet	2	of	2	Attorney Docket Number	2.R493.80

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published	
	8	PRELIMINARY SEARCH REPORT IN SN FR 0214153	

Examiner Signature		Date Considered	
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